

### **REMARKS**

Presently claims 31-57 are pending in this application. Claims 31 and 44 are independent. Applicant respectfully traverses the Rejections/Objections, which are discussed below.

#### ***Claim Rejections under 35 U.S.C. § 103***

Claims 31-34 and 39-43 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,616,067 to Goenka ("Goenka"). Applicant traverses on the basis that claims 31-34 and 39-43 recite subject matter neither disclosed nor suggested by Goenka.

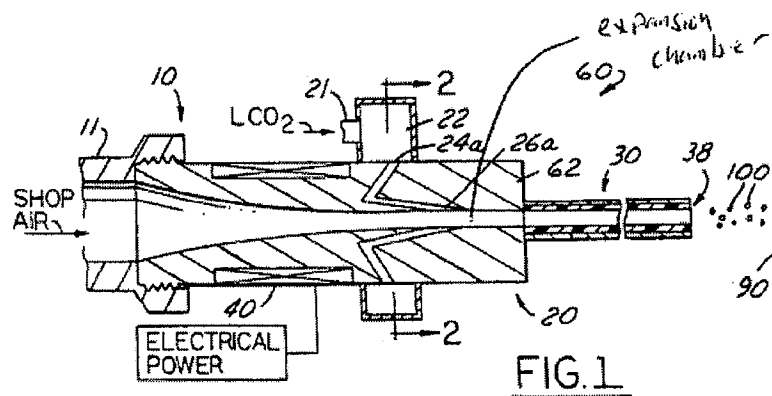
For example, Claim 31 is patentable over Goenka because Goenka fails to disclose or suggest a blasting method for cleaning surfaces using CO<sub>2</sub> characterized in that the carrier gas is supplied under pressure through a blasting line to a blasting nozzle, and the CO<sub>2</sub> is introduced from the an expansion volume into the blasting line at a point upstream of the blasting nozzle, as recited in claim 31. The Office suggests that Goenka's Fig. 1 discloses these features. It does not.

According to claim 31 of the present carrier gas is supplied under pressure through a blasting line 10 to a blasting nozzle 14. *See* Present Application at Fig. 1 (reproduced below). Before entering the blasting line 10, the liquid CO<sub>2</sub> is first fed from a feed line 32 into an expansion volume 34. The solid CO<sub>2</sub> dry snow contained in the expansion volume is then introduced into the blasting line upstream of the nozzle 14. The expansion volume 34, blasting line 10, and the nozzle 14 are all separate elements.



**Applicant's Fig. 1**

Goenka is also directed to a CO<sub>2</sub> cleaning system. The nozzle 60 comprises a tapering section into which the shop air enters via feed line 11 and a diverging section 30. *See* Goenka at Col. 3, lines 4-31; Fig. 1 (reproduced below). Liquid CO<sub>2</sub> is expelled through orifices 26a-d and the resulting solid particles are carried by the shop air toward the diverging section 30. *Id.* Goenka, however, fails to disclose introducing the liquid CO<sub>2</sub> into an expansion volume. Indeed, Goenka fails to disclose an expansion volume altogether.



Goenka's Fig. 1 as marked up by Examiner

The Office has suggested that Goenka's Fig. 1 discloses an expansion chamber in the portion of the nozzle downstream of orifices 26a-d. *See* Office Action at 2-3. The Office's suggested expansion chamber is located within the portion of Goenka's Fig. 1 most analogous to the blasting line. Thus, the Office-suggested expansion chamber is no more than a portion of the blasting line. However, as stated earlier, claim 31 requires that the expansion volume is something other than the blasting line. The examiner's suggestion would read this requirement out of the claim. Indeed, Goenka's Fig. 1 discloses no expansion volume – at best it discloses a modification of Applicant's Fig. 1 such that the expansion volume 34 is removed and feed line 32 is inserted directly into blasting line 10 without any expansion volume.

Thus, the nozzle section identified by the Examiner is not an expansion chamber. Rather, it is just a part of the nozzle or of the blasting line. On this basis alone, the rejection of claim 31 is improper and should be withdrawn.

Additionally, even assuming, *arguendo*, that the Examiner's expansion chamber

constituted an expansion volume within the meaning of claim 1, Goenka would still fail to disclose CO<sub>2</sub> being introduced from the expansion volume into the blasting line upstream of the blasting nozzle, as recited by claim 31. Instead, the “expansion chamber” identified by the Examiner in Fig. 1 of Goenka is located inside the nozzle, and not upstream of it. Thus, the rejection of claim 31 is improper and should be withdrawn for this additional reason.

Accordingly, Goenka fails to disclose or suggest each and every element of claim 31. Applicant, therefore, respectfully requests the withdrawal of the rejections of claims 31, 32-34 and 39-43, which depend from claim 31.

Claims 35 and 36 were rejected under 35 U.S.C. § 103 as being unpatentable over Goenka in view of U.S. Patent No. 5,184,427 to Armstrong (“Armstrong”). Applicant traverses on the basis that claims 35 and 36 recite subject matter neither disclosed nor suggested by the combination of Goenka and Armstrong. In the very least, claims 35 and 36 are patentable for at least the same reasons given above with regard to claim 31, from which they depend. Applicant, therefore, respectfully requests the withdrawal of the rejections of claims 35 and 36.

Claim 37 was rejected under 35 U.S.C. § 103 as being unpatentable over Goenka in view of U.S. Patent No. 5,785,581 to Settles (“Settles”). Applicant traverses on the basis that claim 37 recites subject matter neither disclosed nor suggested by the combination of Goenka and Settles. For instance, claim 37 is patentable for at least the same reasons stated above with regard to claim 31, from which it depends. Applicant, therefore, respectfully request the withdrawal of the rejection of claim 37.

Claims 44-57 were rejected under 35 U.S.C. §103 as unpatentable over Goenka in view

of Settles. Applicants traverse on the basis that claims 44-57 recite subject matter neither disclosed nor suggested by the combination of Goenka and Settles.

Claim 44 is patentable because the combination of Goenka and Settles, in the very least, fails to disclose an apparatus for cleaning surfaces comprising a blasting line for supplying carrier gas under pressure, and expansion volume opening into the blasting line, and a blasting nozzle connected to a downstream end of the blasting line, as recited in claim 44. As stated above with regard to claim 31, Goenka, despite the Office's assertions to the contrary, fails to disclose an expansion volume within the meaning of claim 44. Settles fails to correct this deficiency. Accordingly, the combination of Goenka and Settles fails to disclose or suggest all the elements of claim 44. Applicants, therefore, respectfully request withdrawal of the rejections of claims 44 and 45-57, which depend from claim 44.

### ***Claim Objection***

The Office has objected to claim 38 as being dependent upon a rejected base claim. As explained above, the rejection of claim 31, from which claim 38 depends, is improper and should be withdrawn. Accordingly, Applicant requests the withdrawal of the objection to claim 38.

### **CONCLUSION**

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections, and that they be withdrawn.

Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Respectfully submitted,

By:   
George R. Repper  
*Attorney for Applicants*  
Registration No. 31,414  
ROTHWELL, FIGG, ERNST & MANBECK, P.C.  
Suite 800, 1425 K Street, N.W.  
Washington, D.C. 20005  
Telephone: (202) 783-6040